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Listing of the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) An expanded olefin resin particle comprising:
a copolymer base resin expanded with a blowing agent,
the copolymer base resin comprising about 99.95 to 99.999 weight percent of an olefin and about 0.001 to 0.05 weight percent of an α - ω diene, wherein the copolymer base resin has a weight average molecular weight of about 30,000 to 500,000 Daltons, a crystallization temperature of about 115°C to 135°C, a melt flow rate of about 0.1 dg/min to 100 dg/min as determined using ASTM D-1238 at 230°C and 2.16 kg load, and wherein the expanded olefin resin particle has a particle size capable of passing through a number 2.5 Tyler mesh sieve, but which is retained on a number 30 Tyler mesh sieve.
2. (Previously presented) The expanded olefin resin particle of claim 1, wherein the α - ω diene includes 1,6-heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, 2-methyl-1,9-decadiene, 2-methyl-1,7-octadiene, 3,4-dimethyl-1,6-heptadiene, 4-ethyl-1,7-octadiene, 3-ethyl-4-methyl-5-propyl-1,10-undecadiene, or a combination comprising at least one of the foregoing dienes.
3. (Previously presented) The expanded olefin resin particle of claim 1, wherein the copolymer base resin comprises ethylene, propylene, butene-1, pentene-1, hexene-1, heptene-1, 4-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-hexene, 5-methyl-1-hexene, 1-octene, 1-decene, 1-undecene, 1-dodecene, or a combination comprising at least one of the foregoing.

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4. (Previously presented) The expanded olefin resin particle of claim 1, wherein the copolymer base resin comprises a metallocene-based copolymerization reaction product comprising propylene and one or more α - ω diene monomers.

5. (Previously presented) The expanded olefin resin particle of claim 1, wherein a ratio of the weight average molecular weight to the number average molecular weight of the copolymer base resin is about 2 to about 20.

6. (Previously presented) The expanded olefin resin particle of claim 1, wherein a ratio of the weight average molecular weight to the number average molecular weight of the copolymer base resin is about 2.5 to about 7.

7. (Previously presented) The expanded olefin resin particle of claim 1, wherein the copolymer base resin has a melting point of less than or equal to about 165°C.

8. (currently amended) The expanded olefin resin particle of claim 1, wherein the copolymer base resin has a ratio of extensional viscosity at break to linear viscosity of greater than or equal to about 2.5 at a strain rate from about 0.1 second⁻¹ to about 1.0 second⁻¹.

9. (currently amended) The expanded olefin resin particle of claim 1, having a bulk density of about 0.001 g/ml to about 0.8 g/ml.

10. (currently amended) The expanded olefin resin particle of claim 1, wherein the copolymer base resin has a branching index g'' of about 0.99 to about 0.6, as determined from the equation:

$$g'' = [\text{IV}]_{\text{branched}} / [\text{IV}]_{\text{linear}}$$

wherein IV is the intrinsic viscosity of the branched and linear polymers, respectively.

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11. (Previously presented) The expanded olefin resin particle of claim 10, wherein the branching index g'' is about 0.99 to about 0.93.

12. (Previously presented) The expanded olefin resin particle of claim 1, wherein the blowing agent comprises an organic acid, an inorganic acid, a salt of a carbonic acid, or a combination comprising at least one of the foregoing.

13. (Previously presented) The expanded olefin resin particle of claim 12, wherein the organic acid comprises citric acid, and wherein the salt of carbonic acid comprises sodium carbonate, sodium bicarbonate, ammonium carbonate, ammonium bicarbonate, potassium carbonate, potassium bicarbonate, or a combination comprising at least one of the foregoing.

14. (Previously presented) The expanded olefin resin particle of claim 1, wherein the blowing agent comprises methane, ethane, ethylene, propylene, ethyn, propyne, butane, pentane, hexane, heptane, trichlorofluoromethane, dichlorodifluoromethane, tetrachloroethane, dichlorotetrafluoroethane, methylene chloride, ethyl chloride, nitrogen, oxygen, air, helium, argon, carbon dioxide, water, or a combination comprising at least one of the foregoing.

15. (Previously presented) The expanded olefin resin particle of claim 1, wherein the particle is spherical.

16. (Previously presented) A process to produce the expanded olefin resin particle of claim 1, comprising:

contacting the copolymer base resin with a blowing agent under a pressure greater than or equal to atmospheric pressure,

heating the copolymer base resin and the blowing agent to a temperature greater than or equal to the softening point of the olefin copolymer base resin,

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to produce the expanded olefin resin particle.

17. (Previously presented) A foamed article comprising the expanded olefin resin particle of claim 1.

18. (Previously presented) A process to produce a foamed article, the process comprising:
heating a plurality of the expanded olefin resin particles of claim 1,
reducing the pressure being applied to the expanded olefin resin particles, or both,
to produce the foamed article.